



Using State Funds and REC Markets to Develop New Renewable Energy Projects: The Oregon Model

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Main Points

- Proceeds from RECs sales is helping to buy down the cost of installing distributed renewable generation systems in the Pacific Northwest.
- By making renewable generation more financially attractive to system owners, RECs are enabling public purpose funds that are paying for these systems to stretch their dollars.
- When distributed systems are funded by public-purpose monies, state policies vary regarding who owns the RECs – generators, utilities, the public, or some combination?
- This presentation identifies these approaches and focuses on the method the Energy Trust of Oregon is using to tap the REC Markets, using a pro rata method.

Oregon Policy Landscape on Green Power



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- SB 1149 Oregon “Restructuring” 2001
- In lieu of deregulation a la California created limited deregulation for C&I customers, though not widely utilized.
- Portfolio Options Required of IOUs:
 - Mandatory Green Pricing Programs
 - Block products
 - Usage-based products
 - Habitat donation
 - Time of use option
 - Created the Energy Trust of Oregon – centralized fund

- ...A nonprofit public-purpose organization providing cash incentives and other market development support for energy efficiency, wind, biopower, solar and other renewable energy generation.
- ...Serves and is funded by Oregon customers of PacifiCorp, Portland General Electric, and Northwest Natural.
- ...Works to fulfill the State of Oregon's vision to meet future energy needs through environmentally sound, clean energy sources.

Highlight

Energy Trust, with PacifiCorp purchasing the power, helped finance the 41-MW Euris Combine Hills Wind Ranch. An additional 59 MW has been approved for construction.



3 Phases Energy

- National renewable energy marketing and development firm.
- Serving 7 of the top 10 national green power purchasers.
- As a partner to utilities, the programs supported by 3 Phases Energy have achieved between 4% and 13% participation.
 - National average green pricing participation: 1.2%.
- Utility partners include a selection of the most highly rated programs in the nation: PacifiCorp (4%), City of Palo Alto Utilities (13%), Silicon Valley Power (4%), and Roseville Electric (launching December 12/1/05).
- Supporting 230 MW of new renewable energy capacity *representing 10% of national voluntary demand.*

PacifiCorp *Blue Sky*sm Program

- PacifiCorp operates as Pacific Power in Oregon, Washington, California and Wyoming; and Utah Power in Utah and Idaho.
- PacifiCorp offers three renewable energy options in Oregon.
 - Blue Skysm Usage
 - Blue Skysm Habitat
 - Blue Skysm Block
- PacifiCorp partners with 3 Phases Energy for supply of RECs and marketing in Oregon (100% new, 99% Pacific Northwest sourcing. Wind, biomass, and solar blend).
- Blue Sky has captured national recognition
 - #6 lowest price premium for 100% new renewable energy
 - #3 program by MWh sales
 - #2 program by total number of participants

Energy Trust Has Developed 6 New Commercial Projects By Tapping the Oregon RECs Market



Project	Type	kW	Online Date	Oregon Location	REC Purchaser	Comment
Pepsi Cola of Klamath Falls	Solar	172 kW	9/2004	Klamath Falls	3 Phases Energy	Largest solar system in the Pacific Northwest
Montessori Elementary	Solar	7 kW	4/2005	Beaverton	3 Phases Energy	System powering local elementary school
Selma Community	Solar	8 kW	Currently Building	Selma	3 Phases Energy	System powering Selma Community Center
Apeasay	Wind	22 kW	5/2004	Hood River	3 Phases Energy	Host farm sold; turbine seeking new home
Brewery Blocks	Solar	22 kW	1/2003	Portland	Bonneville Environmental	Integrates solar into the design of a new, high-profile building
Encore Ceramics	Solar	29 kW	10/2005	Grants Pass	Bonneville Environmental	Host is 100% powered by renewable energy

Distributed Generation REC Ownership Policies Vary Nationally When Public Purpose Funding is Utilized



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- *Generators Take 'Em All* (e.g. New Jersey and CA IOUs)
- *Utilities Receive 'Em All* (e.g. California municipal utilities)
- *Public Owns 'Em All...and May Auction Them*
(Massachusetts Technology Collaborative, NYSERDA)
- *Generator Gets Its Share* (e.g. Energy Trust of Oregon)

A Closer Look: The Oregon Model (Generator Gets Its Share)



- Concept: Green Tags granted on a pro rata basis to those bearing above-market cost of renewable energy generation.
 - Energy Trust typically takes title to tags generated over life of project, in proportion to its share of above-market cost.
 - Tags are held in trust on behalf of ratepayers.
 - Energy Trust may sell tags to raise funds to fund more renewables.
- In some cases, Energy Trust may relinquish green tag rights in early years (i.e. 1 – 4).
 - Brings more revenue into project up front
 - Helps ration Energy Trust funds
- Energy Trust incentive lowered by fraction of tag revenue
- Energy Trust retains green tag rights in later years.

Illustration: The Oregon Model (Generator Gets Its Share)



Example (Pepsi Cola of Klamath Falls: 172-kW PV)

Total Project Cost:	\$1,095,000
Accelerated Depreciation:	\$386,000
Oregon State Tax Credit:	\$238,000
Energy Trust Funding:	\$210,000
Projected Proceeds from Energy Output:	\$170,000
<u>Upfront Proceeds of 2.5 years of REC Sales</u>	<u>\$22,500</u>
Residual Costs to Generator	\$68,500

Generator may further reduce their cost by selling RECs from years 2.5 through 4.

A Closer Look: The Oregon Model (continued)



Benefits of the Oregon Model

- Leverages REC markets to buy down the cost of new renewable energy projects, making them more financially attractive to owners.
- Allows administrator of public purpose funds to leverage private-sector funds and expand the impact of its own funding.
- Grants REC equity proportionate to direct financial investment.

Challenges of the Oregon Model

- It is difficult to fund new renewable energy projects on RECs alone, given typical REC contract terms (2 – 5 years).
- Above-market cost analysis is complex, and tracking tags adds a layer to contract administration.
- Renewable energy project owners frequently lack understanding of the REC concept, market structure, value, etc.

Model Expanded to Residential Solar Systems



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- Energy Trust now allows owners of funded residential solar systems to market the RECs produced during first five years of operation.
 - Policy implemented November 1, 2005.
- In August 2005, 3 Phases Energy approved it will purchase solar RECs from residential systems.
- There are 6 contracts already in process for 20 kW. Program managers expect to support over 200 kW of residential solar within one year.
- Bonneville Environmental Foundation has supported residential solar systems in the Pacific Northwest for some time through its partnership with the Northwest Solar Cooperative.

Energy Trust of Oregon *Biopower Program*



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- The Energy Trust of Oregon plans to expand this concept to the *Biopower Program*, launched in May 2005.
- Via an RFP released May 2005, Energy Trust will invest approximately \$5 million in biomass generation projects.
 - Round One generated 25 responses, equivalent to 91 gross MW of capacity, in 17 Oregon counties
 - Sixteen proposals invited to participate in Round Two
- Another RFP planned for 2006.

“Oregon’s biomass resources are abundant, homegrown, and tremendously diverse. More important, these are materials that someone usually has to pay to get rid of. We have the opportunity to use them to produce clean, renewable energy.”

- Adam Serchuk, Biopower Program Manager



Looking Ahead

Key Question for Regulators and Stakeholders:

How can you tap the power of REC markets to stretch your state's public-purpose funds?



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